

28 March 2014

Mr. Brian Waggle
Hargis & Associates - Mesa
1640 South Stapley Drive, Suite 209
Mesa, AZ 85204



H&P Project: HA022814-12
Client Project: WQARF / Phoenix, AZ

Dear Mr. Brian Waggle:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 27-Feb-14 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

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Project: HA022814-12
Project Number: WQARF / Phoenix, AZ
Project Manager: Mr. Brian Waggle

Reported:
28-Mar-14 10:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
31-F-4-3'	E403005-01	Vapor	27-Feb-14	27-Feb-14
31-F-5-3'	E403005-02	Vapor	27-Feb-14	27-Feb-14
31-F-1-3'	E403005-03	Vapor	27-Feb-14	27-Feb-14
31-F-2-3'	E403005-04	Vapor	27-Feb-14	27-Feb-14
31-F-7-3'	E403005-05	Vapor	27-Feb-14	27-Feb-14
31-F-6-3'	E403005-06	Vapor	27-Feb-14	27-Feb-14

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Volatile Organic Compounds by H&P Method TO-15M SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
31-F-4-3' (E403005-01) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	50	11	19	"	"	"	"	"	"	
Tetrachloroethene	390	25	34	"	"	"	"	"	"	
Ethylbenzene	12	10	22	"	"	"	"	"	"	J
m,p-Xylene	13	12	44	"	"	"	"	"	"	J
o-Xylene	9.2	7.0	22	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4	110 %	67-141	"	"	"	"
Surrogate: Toluene-d8	93.8 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	90.4 %	56-127	"	"	"	"

31-F-5-3' (E403005-02) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	49	11	19	"	"	"	"	"	"	
Tetrachloroethene	250	25	34	"	"	"	"	"	"	
Ethylbenzene	16	10	22	"	"	"	"	"	"	J
m,p-Xylene	17	12	44	"	"	"	"	"	"	J
o-Xylene	12	7.0	22	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4	104 %	67-141	"	"	"	"
Surrogate: Toluene-d8	92.5 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	93.7 %	56-127	"	"	"	"

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H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
31-F-1-3' (E403005-03) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	87	11	19	"	"	"	"	"	"	
Tetrachloroethene	630	25	34	"	"	"	"	"	"	
Ethylbenzene	28	10	22	"	"	"	"	"	"	
m,p-Xylene	130	12	44	"	"	"	"	"	"	
o-Xylene	42	7.0	22	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	67-141	"	"	"	"
Surrogate: Toluene-d8	95.1 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	88.9 %	56-127	"	"	"	"

31-F-2-3' (E403005-04) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	50	11	19	"	"	"	"	"	"	
Tetrachloroethene	570	25	34	"	"	"	"	"	"	
Ethylbenzene	ND	10	22	"	"	"	"	"	"	
m,p-Xylene	24	12	44	"	"	"	"	"	"	J
o-Xylene	13	7.0	22	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4	108 %	67-141	"	"	"	"
Surrogate: Toluene-d8	96.1 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	95.4 %	56-127	"	"	"	"

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H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
31-F-7-3' (E403005-05) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	53	11	19	"	"	"	"	"	"	
Tetrachloroethene	970	25	34	"	"	"	"	"	"	
Ethylbenzene	ND	10	22	"	"	"	"	"	"	
m,p-Xylene	22	12	44	"	"	"	"	"	"	J
o-Xylene	11	7.0	22	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4	111 %	67-141	"	"	"	"
Surrogate: Toluene-d8	95.6 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	87.8 %	56-127	"	"	"	"

31-F-6-3' (E403005-06) Vapor Sampled: 27-Feb-14 Received: 27-Feb-14										J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	52	11	19	"	"	"	"	"	"	
Tetrachloroethene	880	25	34	"	"	"	"	"	"	
Ethylbenzene	ND	10	22	"	"	"	"	"	"	
m,p-Xylene	20	12	44	"	"	"	"	"	"	J
o-Xylene	9.2	7.0	22	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4	102 %	67-141	"	"	"	"
Surrogate: Toluene-d8	102 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	89.2 %	56-127	"	"	"	"

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Volatile Organic Compounds by H&P Method TO-15M SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC40405 - TO-15

Blank (EC40405-BLK1)

Prepared & Analyzed: 04-Mar-14

1,1-Dichloroethene	ND	20	ug/m3
trans-1,2-Dichloroethene	ND	40	"
cis-1,2-Dichloroethene	ND	40	"
Benzene	ND	16	"
Trichloroethene	ND	27	"
Toluene	ND	19	"
Tetrachloroethene	ND	34	"
Ethylbenzene	ND	22	"
m,p-Xylene	ND	44	"
o-Xylene	ND	22	"

Surrogate: 1,2-Dichloroethane-d4	961	"	886	108	67-141
Surrogate: Toluene-d8	781	"	864	90.3	75-125
Surrogate: 4-Bromofluorobenzene	1390	"	1530	90.8	56-127

LCS (EC40405-BS1)

Prepared & Analyzed: 04-Mar-14

1,1-Dichloroethene	200	20	ug/m3	202	99.1	65-135
trans-1,2-Dichloroethene	190	40	"	202	93.3	65-135
cis-1,2-Dichloroethene	200	40	"	202	99.3	65-135
Benzene	160	16	"	162	96.2	65-135
Trichloroethene	300	27	"	272	111	65-135
Toluene	180	19	"	191	95.5	65-135
Tetrachloroethene	370	34	"	345	106	65-135
Ethylbenzene	210	22	"	220	96.8	65-135
m,p-Xylene	480	44	"	440	109	65-135
o-Xylene	250	22	"	220	112	65-135

Surrogate: 1,2-Dichloroethane-d4	994	"	886	112	67-141
Surrogate: Toluene-d8	822	"	864	95.2	75-125
Surrogate: 4-Bromofluorobenzene	1570	"	1530	103	56-127

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Notes and Definitions

J- Report	This sample is reported to standard MDL determined for this method. All confirmed hits above the reported MDL value and below the RL, will be flagged with a "J" result. If an MDL is not listed, the analyte is ND at the RL.
J	Detected but below the RL/LOQ; therefore, result is an estimated concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Appendix


H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory (Certification # L11-175) in accordance with the DoD-ELAP program. H&P is approved by the State of Arizona under Certification Numbers AZM758 and AZ0779. H&P is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

Hexachlorobutadiene by EPA TO-15 & TO-14A	1,3-Dichlorobenzene by EPA TO-15 & TO-14A
1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A	Trichlorofluoromethane by EPA TO-14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A	Naphthalene by H&P SOP TO-15/GC-MS
Dichlorotetrafluoroethane by EPA TO-14A	1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A	1,2-Dibromo-3-chloropropane by EPA TO-15
Benzene by EPA TO-15 & TO-14A	1,3-Butadiene by EPA TO-15
Chlorobenzene by EPA TO-15 & TO-14A	1,1,2-Trichlorotrifluoroethane by EPA TO-14A
Ethyl benzene by EPA TO-15 & TO-14A	Carbon disulfide by EPA TO-15
Styrene by EPA TO-15 & TO-14A	1,4-Dioxane by EPA TO-15
Toluene by EPA TO-15 & TO-14A	
Total Xylenes by EPA TO-15	
1,1,1-Trichloroethane by EPA TO-15 & TO-14A	
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A	
1,1,2-Trichloroethane by EPA TO-15 & TO-14A	
1,1-Dichloroethane by EPA TO-15 & TO-14A	
1,1-Dichloroethene by EPA TO-15 & TO-14A	
1,2-Dichloroethane by EPA TO-15 & TO-14A	
1,2-Dichloropropane by EPA TO-15 & TO-14A	
Benzyl Chloride by EPA TO-15 & TO-14A	
Bromoform by EPA TO-15	
Bromomethane by EPA TO-15 & TO-14A	
Carbon tetrachloride by EPA TO-15 & TO-14A	
Chloroethane by EPA TO-15 & TO-14A	
Chloroform by EPA TO-15 & TO-14A	
Chloromethane by EPA TO-15 & TO-14A	
cis-1,2-Dichloroethene by EPA TO-15 & TO-14A	
cis-1,3-Dichloropropene by EPA TO-15 & TO-14A	
Methylene chloride by EPA TO -15 & TO-14A	
Tetrachloroethane by EPA TO-15 & TO-14A	
trans-1,2-Dichloroethene by EPA TO-15	
trans-1,3-Dichloropropene by EPA TO-15 & TO-14A	
Trichloroethene by EPA TO-15 & TO-14A	
Vinyl chloride by EPA TO -15	
2-Butanone by EPA TO-15	
4-Methyl-2-Pentanone by EPA TO-15	
Hexane by EPA TO-15	
Methyl tert-butyl ether by EPA TO-15	
Vinyl acetate by EPA TO-15	

This certification applies to samples analyzed in summa canisters.

Lab Client and Project Information			
Lab Client/Consultant:	Hargis + Associates	Project Name / #:	HA022414-895/L4
Lab Client Project Manager:	Brian Waggle	Project Location:	Multiple Sites, Phoenix, AZ
Lab Client Address:	1640 S. Stapley Dr.	Report E-Mail(s):	BWAGGLE@HARGIS.COM BLAINE@HARGISMANEG.COM
Lab Client City, State, Zip:	Mesa, AZ		
Phone Number:	480-345-0888 x 265		
Reporting Requirements	Turnaround Time	Sampler Information	
<input checked="" type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input checked="" type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____ <input type="checkbox"/> CA Geotracker Global ID: _____	<input checked="" type="checkbox"/> 5-7 day Stdnd <input type="checkbox"/> 24-Hr Rush <input type="checkbox"/> 3-day Rush <input type="checkbox"/> Mobile Lab <input type="checkbox"/> 48-Hr Rush <input type="checkbox"/> Other: _____	Sampler(s): D. Petryshin Signature:  Date: 2/27/14	

Sample Receipt (Lab Use Only)	
Date Rec'd: 2/28/14	Control #:
H&P Project # 44022814-12	
Lab Work Order # E403005	
Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> See Notes Below
Receipt Gauge ID: 11167	Temp: 25
Outside Lab:	
Receipt Notes/Tracking #:	

Lab PM Initials: SN

Additional Instructions to Laboratory:

☐ Check if Project Analyte List is Attached

* Preferred VOC units (please choose one):

contact Bayne for Analyte lists

BTEX, PCE, TCE, CIS 1,2 DCE, TRANS 1,2 DCE, 1,1 DCE

→ GOAL = ACHIEVE LOW RUS FOR BENZENE DESIRATE PCE

[illegible]

Approved/Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<i>[Signature]</i>	2/27/14	0910	<i>[Signature]</i>	2/27/14	
Company:			Company:		
<i>[Signature]</i>			<i>[Signature]</i>		
Company:			Company:		
Approved/Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<i>[Signature]</i>					
Company:			Company:		
<i>[Signature]</i>			<i>[Signature]</i>		
Company:			Company:		
Approved/Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<i>[Signature]</i>					
Company:			Company:		
<i>[Signature]</i>			<i>[Signature]</i>		
Company:			Company:		